

rooftop “permanently attached to a building.” Support for this limitation is found in the specification on page 9, line 17 to page 10, line 3. New independent claim 8 has been added to more particularly point out and claim that the sheave is “arranged coaxial with the single input shaft”. Support for new claim 8 is found in the specification on page 5, lines 15-16 and in Fig. 1.

Applicants have clarified the rejected claims and have also narrowed the claims, thereby removing issues for appeal. Applicants respectfully submit that: (1) no new matter has been added to the application by the Amendment; (2) the Amendment resolves all issues raised by the Examiner in the second Office Action; (3) the subject matter of the Amendment already has been included in the Examiner's search and therefore does not require the Examiner to perform further searching; and (4) the Amendment places the application in condition for allowance or in better condition for appeal. Consequently, Applicants respectfully request that the Amendment After Final Rejection be entered in accordance with 37 C.F.R. §116 and MPEP 714.13.

Claim Rejections - 35 U.S.C. § 102

The Examiner has rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent JP7-97157 (Onishi). Specifically, the Examiner states that Onishi discloses an elevator apparatus comprising:

an actuating device including a sheave (at 5) around which a rope (13) engaged with an ascending and descending cage (9) is wound, the sheave being adapted to rotate thereby to move the rope with its rotation, and a driving section (5) for rotating the sheave, and

a shielding body (3) for shielding the actuating device,

wherein the actuating device and the shielding body are installed on a rooftop of a building in which said ascending and descending cage is disposed, the shielding body being readily detachable from the rooftop.

In view of the foregoing amendment, Applicants respectfully traverse the rejection of claim 1.

Claim 1 as amended recites, *inter alia*,

will not largely project from the rooftop 50 of the building, and therefore, a favorable sunshine on the building (especially on the north side) can be maintained.

A person of ordinary skill in the art, having the above disclosure before him, would understand that claim 1 when read in light of the specification claims an elevator apparatus that is installed on a rooftop permanently attached to a fully constructed building.

Onishi does not disclose each and every element of the present invention. Onishi does not disclose an elevator apparatus having a shielding body with a cross-sectional area less than the cross-sectional area of a cage. Rather, the mobile machine room 3 in Onishi has a cross-sectional width that is greater than the cross-sectional width of the car 9 as shown in Fig. 1. Further, Onishi also does not disclose an elevator apparatus installed on a rooftop permanently attached to a building. Rather, Onishi discloses an elevator apparatus intended to be used only during the period of time when a building is being constructed. The title of the Onishi invention is, "Elevator Device for Construction Work". Referring to Figs. 1, 5, 8, and the abstract, Onishi teaches, "A mobile machine room 3" that is "temporarily provided in a lift path 2" (emphasis added). As the building structural frame advances upward during construction, the mobile machine room 3 is advanced from a first lower elevation to a second higher elevation as shown in Fig. 8. Accordingly, Applicants respectfully submit that claim 1 is not anticipated by Onishi, and request that the rejection of claim 1 be withdrawn.

The Examiner, without comment, has rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by European Patent Application Publication No. 0 646 537 A1 (Hakola). In view of the foregoing amendment, Applicants respectfully traverse this rejection of claim 1.

As discussed above, claim 1 as amended recites as a limitation a shielding body "having a horizontal cross-sectional area less than the cross-sectional area of the cage." Hakola does not disclose this limitation. Hakola discloses a machine room module 1 that is installable over an elevator shaft 40. The machine room module 1 has a base 2 comprising steel rails 20 supported by a top module 26 having a size corresponding to the cross-section of the elevator shaft 40. The machine room module is provided with a ceiling 49 and sidewalls 48 spaced apart a width corresponding to the cross-sectional width of the elevator shaft 40 as shown in Fig. 2d. Consequently, Hakola does not anticipate claim 1 as Hakola does not teach a shielding body

having a horizontal cross-sectional area less than the cross-sectional area of the cage within an elevator shaft. Accordingly, Applicants respectfully request that the rejection of claim 1 be withdrawn.

The Examiner has rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,644,111 (Cerny *et al.*). The Examiner states that Cerny *et al.* shows an elevator apparatus having a hoist motor (16) driving a sheave (16) for raising and lowering a cage (20). The hoist motor is contained in a building structure located on a roof (14) which includes a hatch door (26). The Examiner further states that the hatch door is a shielding body that is readily detachable from the rooftop. In view of the foregoing amendment, Applicants respectfully traverse this rejection of claim 1.

Cerny *et al.* discloses and claims an elevator safety system for monitoring the inappropriate opening of an elevator hatch door 26 attached to a full-size elevator machine room 12 disposed over an elevator shaft 10. With reference to Fig. 1A, the walls of the elevator machine room 12 are permanently affixed to the building structure. Cerny *et al.* thus discloses an elevator machine room 12 which is an integral part of a building structure. A person of ordinary skill in the art would understand from the above disclosure and conventional practice that the machine room hatch door 26 is either pivotally attached to the machine room wall or slidably attached to the wall as are the shaftway doors 24 as shown in Figs. 2 and 3.

Cerny *et al.* does not disclose each and every element of the present invention. As discussed above, claim 1 as amended recites "said shielding body being readily detachable from said rooftop". Cerny *et al.* does not disclose this limitation. Furthermore, claim 1 as amended recites a shielding body "having a horizontal cross-sectional area less than the cross-sectional area of the cage." A person of ordinary skill in the art would appreciate from the Applicants disclosure that Applicants are using the term "shielding body" to refer to a structure which encloses the elevator drive apparatus, and thus has walls which define an open horizontal cross-sectional area. Understanding "shielding body" in this sense, Cerny *et al.* also fails to disclose this limitation. In Fig. 1A, Cerny *et al.* discloses a machine room 12 which has a width which is greater than the width of the elevator cab 20. Thus, Cerny *et al.* does not anticipate claim 1 as amended as Cerny *et al.* does not teach either a readily detachable shielding body or a

shielding body having a cross-sectional area which is less than the cross-sectional area of the elevator cage. Accordingly, Applicants respectfully request that the rejection of claim 1 be withdrawn.

Claim Rejections - 35 U.S.C. § 103

The Examiner has rejected claims 2, 3, 5 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Onishi in view of U.S. Patent No. 5,615,864 (Liebetrau *et al.*). The Examiner contends that Onishi discloses the basic claimed elevator actuating device, but does not show the details of Onishi's sheave motor. The Examiner further contends that Liebetrau *et al.* shows the basic claimed elevator actuating device including a damping support member (5) with a sheave (6) and a speed-reducer (8) mounted on one side and a drive assembly (9) with a brake (10) mounted on the opposite side. The Examiner states that it would have been obvious to one of ordinary skill in the art to arrange the drive means of Onishi in the manner taught by Liebetrau *et al.* to reduce motor oscillations. In view of the foregoing amendment, Applicants respectfully traverse this rejection.

The disclosure of Onishi is discussed above. As noted, Onishi does not disclose the shielding body with a horizontal cross-sectional area less than the cross-sectional area of the elevator cage. Further, Onishi does not disclose an elevator apparatus installed on a rooftop permanently attached to a building. Consequently, Onishi does not teach an elevator apparatus installed on a rooftop permanently attached to a building, having a shielding body with a cross-sectional area less than the cross-sectional area of the elevator cage. Accordingly, there is no objective teaching in Onishi that would enable one of ordinary skill in the art to modify the invention of Onishi in a manner that would render the present invention obvious under 35 U.S.C. § 103(a).

Liebetrau *et al.* discloses an elevator hoist apparatus including an electric motor 9, a reduction gear assembly 8, a brake assembly 10 and a drive pulley 6. These components are mounted such that they share a common central axis. Liebetrau *et al.* does not disclose an elevator hoist installed on a rooftop permanently attached to a building nor does Liebetrau *et al.* disclose a shielding body. Consequently, Liebetrau *et al.* does not teach an elevator apparatus installed on a rooftop permanently attached to a building, having a shielding body with a cross-

sectional area less than the cross-sectional area of the elevator cage. Accordingly, there is no objective teaching in Liebetrau *et al.* that would enable one of ordinary skill in the art to modify the invention of Liebetrau *et al.* in a manner that would render the present invention obvious under 35 U.S.C. § 103(a).

In establishing a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that the prior art references teach or suggest all of the claim limitations. See M.P.E.P. § 2142. Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a).

Although the foregoing discussion confirms that Onishi and Liebetrau *et al.* are not properly combinable under 35 U.S.C. §103(a) to render the present invention obvious, even if Onishi and Liebetrau *et al.* were combined, the combination also does not render the present invention obvious. More specifically, Applicants respectfully assert that the combination of Onishi and Liebetrau *et al.* fails to disclose at least the two limitations from claim 1 as amended, namely, an actuating device and a shielding body installed on a rooftop permanently attached to a building, and a shielding body having a cross-sectional area less than the cross-sectional area of the elevator cage. As the combination of references fails to teach or suggest all of the elements of claim 1 of the Applicants' invention, it is respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claims 2, 3, 5 and 6, all of which depend from either directly or indirectly from claim 1. Accordingly, it is requested that the rejection of claims 2, 3, 5 and 6 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

The Examiner has rejected claims 2, 3 and 5-7 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,923,055 (Holland) in view of Hakola. The Examiner states that

Fig. 6 of Holland shows the basic claimed elevator actuating device including a support member (22) with a sheave (16) and speed-reducer (14) mounted [on] the left side and a drive assembly (10) with a brake (20) mounted on the opposite right side. It varies from the claims by not disclosing that it is mounted on a rooftop of a building in a removable shielding.

The Examiner further contends that, "Hakola shows a method of mounting an elevator to a building which has the elevator hoist motor mounted on [a] base which is lifted to a rooftop, installed, and covered with a removable shielding member (49). It would have been obvious to one of ordinary skill in the art to install the elevator of Holland by having its base and actuating device lifted to the rooftop of the building, and then enclosed with a protective shielding enclosing it, to quickly install the elevator in a modular fashion, as taught by Hakola." In view of the foregoing amendment, Applicants respectfully traverse this rejection.

Holland discloses an elevator hoist apparatus including an electric motor 10, a gearbox 14, a brake assembly 20 and a sheave 16. These components are arranged such that the motor 10, the gearbox 14 and the brake assembly 20 share a common central axis, while the rotational axis of the sheave is perpendicular to this common axis. The Examiner admits that Holland does not disclose an elevator hoist apparatus having a shielding body. Consequently, Holland does not teach an elevator apparatus having a shielding body with a cross-sectional area less than the cross-sectional area of the elevator cage. Accordingly, there is no objective teaching in Holland that would enable one of ordinary skill in the art to modify the invention of Holland in a manner that would render the present invention obvious under 35 U.S.C. § 103(a).

As discussed above, Hakola does not disclose the shielding body with a horizontal cross-sectional area less than the cross-sectional area of the elevator cage. Consequently, Hakola does not teach an elevator apparatus having a shielding body with a cross-sectional area less than the cross-sectional area of the elevator cage. Accordingly, there is no objective teaching in Hakola that would enable one of ordinary skill in the art to modify the invention of Hakola in a manner that would render the present invention obvious under 35 U.S.C. § 103(a).

Holland and Hakola are not properly combinable under 35 U.S.C. § 103(a) to render the present invention obvious. However, even if Holland and Hakola were combined, the combination would not render the present invention obvious. The combination of Holland and Hakola fails to disclose at least a shielding body having a cross-sectional area less than the cross-sectional area of the elevator cage. As the combination of references fails to teach or suggest all of the elements of claim 1 of the Applicants' invention, it is respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claims 2, 3 and 5-7, all of

which depend from either directly or indirectly from claim 1. Accordingly, Applicant's respectively request that the rejection of claims 2, 3, 5 and 6 under 35 U.S.C. § 103(a) be withdrawn.

The Examiner has rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Onishi in view of Liebetrau *et al.* in further view of U.S. Patent No. 5,469,937 (Hakala *et al.*). The Examiner contends that

Onishi, as modified, shows the basic claimed elevator device, but varies from claim 4 by not having the brake located radially inwardly of the motor. Hakala *et al.* shows a similar compact elevator drive and teaches placing the brake mechanism (122, 123) within the motor.

In view of the foregoing amendment, Applicants respectfully traverse this rejection.

As previously noted, Onishi and Liebetrau *et al.* both fail to disclose an elevator apparatus installed on a rooftop permanently attached to a building, and having a shielding body with a horizontal cross-sectional area less than the cross-sectional area of the elevator cage. With reference to Fig. 2, Hakala *et al.* discloses an elevator apparatus including an electric motor, including a stator 114, stator windings 115, a rotor 117, rotor windings 120, and a brake assembly 121 disposed radially inwardly of the electric motor 106. Hakala *et al.* does not disclose the apparatus being installed on a rooftop permanently attached to a building nor does it disclose a shielding body. Consequently, Hakala *et al.* does not teach an elevator apparatus installed on a rooftop permanently attached to a building, having a shielding body with a horizontal cross-sectional area less than the cross-sectional area of the elevator cage. Accordingly, there is no objective teaching in Onishi, Liebetrau *et al.* or Hakala *et al.* that would enable one of ordinary skill in the art to modify the invention of Onishi in view of Liebetrau *et al.* in a manner that would render the present invention obvious under 35 U.S.C. § 103(a). Accordingly, Applicants respectfully request that the rejection of claim 4 under 35 U.S.C. § 103(a) be withdrawn.

New Claims

Applicants have added new independent claim 8, which recites all the limitations of claims 1 and 7, and recites as an additional limitation that the sheave is "arranged coaxial with the single input shaft". Support for new claim 8 may be found in the specification at lines 15 and 16 of page 5, which provides, in pertinent part, "[t]he sheave 27 rotates concentrically with the input shaft 21". Support for new claim 8 is also found in the drawings. With reference to Fig. 1, the sheave 27 is shown to share a common axis of rotation with the input shaft 21. Thus, no new matter has been added.

CONCLUSION

In view of the foregoing amendment and remarks, Applicants' respectfully submit that the present application, including claims 1-8, is in condition for allowance. Entry of the Amendment, withdrawal of the Final Rejection and Notice of Allowability of claims 1-8 is respectfully requested. Should the Examiner choose to issue an Advisory Action, Applicants respectfully request that prior thereto, the Examiner telephone the undersigned at the telephone number indicated to discuss the application.

Respectfully submitted,

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MARKED-UP VERSION OF CLAIMS

1. (Twice Amended) An elevator apparatus comprising:

an actuating device including a sheave around which a rope engaged with an ascending and descending cage is wound, the cage having a horizontal cross-sectional area, said sheave being adapted to rotate thereby to move said rope with its rotation, and a driving section for rotating said sheave, and

a shielding body for shielding said actuating device, the shielding body having a horizontal cross-sectional area less than the cross-sectional area of the cage,

wherein said actuating device and said shielding body are installed on a rooftop [of] permanently attached to a building in which said ascending and descending cage is disposed, said shielding body being readily detachable from said rooftop.

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